



SEQUENCE LISTING

<110> University of Kentucky Research Organization  
Schardl, Carl L.  
Wilkinson, Heather H.  
Spiering, Martin

<120> Loline Alkaloid Gene Clusters of the Fungal Endophyte  
neotyphodium uncinatum

<130> 050229-0343

<140> 10/601,700

<141> 2003-06-24

<150> 60/390,446

<151> 2002-06-24

<160> 17

<170> PatentIn version 3.2

<210> 1

<211> 23

<212> DNA

<213> Unknown

<220>

<223> Artificial primer sequence

<400> 1

gttgatctcc aagatccgtg agg

23

<210> 2

<211> 20

<212> DNA

<213> Unknown

<220>

<223> Artificial primer sequence

<400> 2

gtttcgtccg agttctcgac

20

<210> 3

<211> 23

<212> DNA

<213> Unknown

<220>

<223> Artificial primer sequence

<400> 3

gtctggcgaa ttctacagac acg

23

<210> 4  
<211> 21  
<212> DNA  
<213> Unknown

<220>  
<223> Artificial primer sequence

<400> 4  
gatggccatg tgaggaaaga g 21

<210> 5  
<211> 24  
<212> DNA  
<213> Unknown

<220>  
<223> Artificial primer sequence

<400> 5  
cggtgcgcgt cttctaaact tgac 24

<210> 6  
<211> 25  
<212> DNA  
<213> Unknown

<220>  
<223> Artificial primer sequence

<400> 6  
gaatctttcc gatgcaaggc ttacg 25

<210> 7  
<211> 23  
<212> DNA  
<213> Unknown

<220>  
<223> Artificial primer sequence

<400> 7  
ggtctagtat tacgttgcca ggg 23

<210> 8  
<211> 22  
<212> DNA  
<213> Unknown

<220>  
<223> Artificial primer sequence

<400> 8  
gttgcccacg gtgcgcgtct tc 22

<210> 9  
<211> 20  
<212> DNA  
<213> Unknown

<220>  
<223> Artificial primer sequence

<400> 9  
tggtcaacca gctcagcacc 20

<210> 10  
<211> 20  
<212> DNA  
<213> Unknown

<220>  
<223> Artificial primer sequence

<400> 10  
gagaaaatgc gtgagattgt 20

<210> 11  
<211> 18  
<212> DNA  
<213> Unknown

<220>  
<223> Artificial primer sequence

<400> 11  
tccgagatct ggacgagc 18

<210> 12  
<211> 20  
<212> DNA  
<213> Unknown

<220>  
<223> Artificial primer sequence

<400> 12  
taatacgact cactataggg 20

<210> 13  
<211> 17  
<212> DNA  
<213> Unknown

<220>  
<223> Artificial primer sequence

<400> 13  
caggaaacag ctatgac 17

<210> 14  
<211> 16  
<212> DNA  
<213> Unknown

<220>  
<223> Artificial primer sequence

<400> 14  
gtaaaacgac ggccag 16

<210> 15  
<211> 25346  
<212> DNA  
<213> *Neotyphodium uncinatum*

<400> 15  
atatttatat taaatagtc ttattatcta gattaaataa tcctatacta tttatctaata 60  
agtttttatta ctaatatagc ggtatatagc tatacttttt ctttaaggagt tttactatat 120  
taatttcctt tcttacttag gctataacta taatttttag ttttagtaagt tactttatta 180  
gattatttat ttaattatag tatttttacta aattaggagc tatctactac cctagactag 240  
tgttaaataa aatatttttt ctatttctaac taggttaaatt actaaatatt atctaatttc 300  
tctaagtagc ttagtaacta ttaaaggtag ctttaattaaa tagtgcctat atcttaaagc 360  
taaattctac cttatctaaa gtaatttttc ctaagttaaa gaagtttagga tccctattct 420  
taagctctaa ctatatataa atatatatgt taagtgcctat ctaaagctat ttatattata 480  
atactagaat tttctcttaa gtaaaccctt tttaatttat aaagcttaag attaaatact 540  
taggaagtagc tttataaata taattagact aggttatagt agttctctat tctattaggt 600  
tagccttaga taataaagta taatacttct atagctagta ataggtttcc ttaattattt 660  
ttagttatat aaaattaagg tctttaagtt atcccctagt gttttctatt taaccctaata 720  
tagtaatat aaactaaagg agtatcttat ccttagactc attttaagtt tataatatag 780  
ttagtatttt aactacttat taaagcttta agttaatatc ttacttaagt atcttacact 840  
agtttaactt aggtatacct attaccttta tctttacttt aaaatcttta ataaagtttag 900  
taatattatc ccctataaac tactaaatat tgatttttta aattttttta ggggttatta 960

gttatagcca atgcatctaa taaaataaga taataataat tactagcaat acctagctag	1020
tataataatt aacttataac taatcttaac tatagtaata aataaaaccc taatagaaac	1080
aagctttaag gttataaata tagggggggc tataagggtta gattaaagt tgaataaac	1140
tttatagcta cgttagcgca agatatagtc atagttcgcg accgcagtca aactcaaatt	1200
cgttcgataa actactaaat attataccta ttttatatag taataaggga tatctaatac	1260
actattatTT ctctaagaag ctttataaag gtctttatat taaggcccct aaggggttta	1320
ggtatagtct ttctattatt aggatctttt cctaagtagt ttttaaatta ggtttatact	1380
aaactagtaa ctattttaga attaattaat ttctaactag gaactagagt actaggtaat	1440
agaaattctt agagatcctt taggtaactt agctacttac taggccttac tttacttagt	1500
tattttaaTaat aaaataaggt aagggttaaat atagaattag ctaagagtgc ttttaattaa	1560
tctattagaa aagtaatagc ttaactaaat atctaaatac ttataagact ttactaaaaa	1620
agggttttta gtagtgtaat atttatagtt ataagtaagc tataagtaaa ggctattgat	1680
ttttttaaTaat tttttggggg ttattagtta tagctaatgc atctaataaa ataagataac	1740
tataattact agtaatacct agctagtata ataattaact tataactaat cttactata	1800
gtaataaata aaaccctaat agaaataagc tttaagggtta taaatatagg gggggctata	1860
aggtagatt aaagtttgta ataaagtttg tggctgcgtt agcgcaagat atagtcatag	1920
tttgcgaccg tagttaaact caaatcgtt cgagttttta agtaaaggct ataagtataa	1980
ttatatagct ctttataata agctataaga ttctaatact tagctaaata actataaaat	2040
taataataag tcttaagatt aaatagttta taacactagg tagcgcttcc tatcttaggt	2100
tcttatatTT agagatctct agtaaggggt taatagctta gctagtgttt atagaatata	2160
ccttaggatt agttactatc ttctctata gttttatata atataatttc ctcttcttaa	2220
tctatcttaa ctctctaagc ctagctagcc ttatattaat actatagcct ctttaggta	2280
taagcctagg ctattaatTT atattatact atagggaTaa taaaataaag gggttttata	2340
taaaatagct tagtaatagc taaagaatTT agctagaaat acccttctaa ttaatcttag	2400
ctagaagtaa gtttaattaga gagtctaagg tccttaggggt tttaaaacct atttctctac	2460
tagttttatt aagtaaaaaa taatacccta aaagacataa tactagccta tagttatagg	2520
tagtaatagc atttacttac actaaagggg ttaattaact taatagtagc aattataata	2580
atagctaaat ctatctctat atatagggat agattagatt agattaaata atctattaga	2640
ttagaaatgc ctttttaatt aaatcagggg aaaatagtct tattaattta tcttattaaa	2700

gtaaatataa tagtagctat agtaacacta ggccttaaag tcaaaaatct agagttagtt	2760
atatataatt tatactaaag aaatctagct ataggtagtc cctttataga tttaaataatc	2820
cccttatcta gataactaat atcgttatcc cttaatgtgt tatccattcc tttaatccct	2880
agtgccttacc atcacgatcg cgtgttttgt gggcgcgcg atcatagcac acagtacttc	2940
ttctagatth ggactaacgt ggtatgcgca tttagtggcc ctaggacgta tggtgccgga	3000
ctgttgtagg ctatccgtcc tagcctaacc tatctaggca ttggtctagc aacaggctta	3060
cgggggctag ctaagatgta gatatgtaca agatgctatc aaactgctat tgtgtttgcc	3120
gagaagggtta ctagcagatg ccaccgacgg aaacgatgcc cattttcttc tggcacagaa	3180
tcagagacgt attgggtggt tgtcaataacc agagtctgat cagtggaaaca tggaaaatcg	3240
gggggacaaa atctgcctag ccgtcatcca aaaaaaaaaa aaccaattgc tacttgcgtc	3300
tagacctgaa gagtgtatcg actcgatata cgacagaaaag tggcttcaca gaagaccgt	3360
ctcctctaca tgccacgctt gaaaccctc caggttggtg gccagacagt tttccagctc	3420
ccgacgatac agaatacaacc cccaaccct gatcagtttg ttagagcagt ccacagaaca	3480
aagcgacaag agcccttggt caacctacca agttttctct tccttgtag cctcagctgt	3540
tttcttgctt ttgcgtgcat gtgtatggta gagtgtcttg tcccaaagta ggctcatctt	3600
cctctccac tggcagtggt atttggaagt cgcctcgagt tgacaaatgc ccgcctgttg	3660
gcaccttgcg atgatttcgc acaaccactc tacctgaacg gtgatgaccg cgggggagtt	3720
gaccagaagt gtagggcact ggggtccata gaggatgacc atgttgggga atgaatgaat	3780
ggccattccg agatgcgact cgacaccatc ggaccaggca tcttctaaac ggatgccatt	3840
ccggcctctg atatgaagac tcctgagccc gcttgccctg tcgccaacc cggtggcaag	3900
aattatggct tcgcattcaa ctgtctgccc atgaacgcgg atacctgtct ctgtaattaa	3960
ctcgatttgc tggttgctga tgtcaataac cttcacatgg ggttggtcca taacctcgta	4020
aagatcctct tccaaacagg gtcgcttgat accaaaaggca aaagatggaa tttgaggcac	4080
caggagctcc cgtttggcca catcgctgat tctagctcgc gtccgccgag ccagaaatc	4140
atacgcatcc cggttggtt ggatgttctg gcacagatcc cggaaccag ccatccagaa	4200
agcccagcct ccgcccagat agcgttggtg ataaaaatgg tttcgctcct ctattgggac	4260
atccaacgtg tcctgggtcac ggggcacgta gccgaaaccg tttgaagtct gcagtccaag	4320
tcgtagggct tctctgtggt cgtcgggtct catgcaaagt gccgttgccg tctggctcgg	4380

gctgccgtat ttgcgtagag tgaggcatgg agactgctgg aatatcgtca tggccttggc	4440
tatcttacct acagattgga tgatctgaac tccgcttggc cccgttccaa tgacagccac	4500
cctcttaccg cgcatactga cagcgtcatg aggccatttt gcggtgtggt agatgggacc	4560
gcggaatcga gacattcctg gaatcctggg gatgttgaga acggacgaaa accctacagc	4620
tggaatgaac catcgcgcct cggctcttct gccatcttct aaagagacgg tccatctctg	4680
ggtagtttct gagtaccggg ccgcggaaaac cgaaacgcca aactcaaaac tagcagagat	4740
ttcccatcgc ttgtccacgt ggtcaaaaata tctcagcatc tctgcacggg tgggaaattg	4800
ctctacccat tcccaatctt ggagaagctc cgcacatag aactggtaga agggaaacag	4860
gctgtcgact gctgctcccg gataagcgtt ctgcgcgcag acacctccaa gacgttcctg	4920
gcgctcaaac ccttggactc gaaatccgag ctttcgtagt ctttagtcat agttcagtcc	4980
tacctctcta ctctattcgt gtcttggatg gcaacgtaga ctctcacctg tagacagcga	5040
gaatacctga aaaaccagcg ccaacgacga ttacgtccaa attggtcaat gtcacttag	5100
tgaaatgaag aagaattaaa taatcatatg cagaatagaa gcaaattttg gtgtatcaga	5160
aatgtcatca aaggctaaca gctccgggga cagaaaagct tgatcgaggc tgcaatttac	5220
tgagaggcgt aagggaactga tactaagacg gtcgattatc tgtgtgcgag tggtcagaat	5280
gggtaactgc gcatttggat agcccagttt gggaggggga gtatagtcgt acacatggat	5340
tcgcaatttg ggaatgaagc gttaagtctg ttatggtata atagggtcac taaatgcaca	5400
taacgcgtta gtcctaatacc ggattaacga tccatgcacc ttatgcctat atgtgtcata	5460
tttaaaggta ttgatattat taaagctatt acaattacca ctatactagt attaacttaa	5520
gtaattaact ctctattata tacgccttaa ataattacta ctaaaataaat tcaaccacta	5580
taaatccgtt acttactaag tattaatagc actgattata tcttttatag ttatatacaa	5640
tatctttatc tttaataatg acataataaa gggcacttaa aaagagcctt attatattat	5700
attgcgttgc attgcattgc gttacattat attagaaggc tttttacaat aagcattata	5760
gtaagccact tgcattttat actagctctc taatatactt agcaagggat taagtaaaca	5820
tgtacttttt ttgttttagg actaacgcgg tatgcgcatt tagtgacccg gtataatagg	5880
gcataggaga ggcgtgagtg ggggtgttcac tcactccgtg tcacgtcact tctcaciaag	5940
gagagggagc gtggctattc ggacctgcgt tttcttgctt actagagctg tgcctaccac	6000
gtaatagggc cacatcccac atcccacgcc ccgccactaa attatttgta tagcactccc	6060
tagcaataaa aatagtcaga attacagtac acccctgagt tattttacag atctacataa	6120

caggggggat	tgagcgaatt	aagtgctagc	aaagaaataa	gggagatagg	ggctaggatt	6180
agcaagtacc	tagattcctt	tatactttat	atagaaaatt	atatatcttt	tagtagtgct	6240
atatatgcta	tatatTTTcc	ttatagctct	ctaaaataat	ataggggttc	tagtgcaactt	6300
atagctaatt	atagctatta	gagaggaacg	aaaaactagg	gcatgtagat	ttgtaaaatg	6360
aatgtgtaca	ggcctgtcgg	ccccgcccgc	cgcaataggt	aatagctgta	ctacgcccgt	6420
agtggccacc	cacttatcat	gccacgcccc	acttcttttg	gttcgcgtgc	cacttcagtgc	6480
gttattactc	cgtattcata	agcttgacaa	acacacatcc	gcgacaacgg	tatcctcatc	6540
tgcagggccg	cataccataa	tgcttgctgc	agctcattga	taatatacct	ggcctaagat	6600
agacacgacc	gaccggctgg	agtcacgcgc	tttgctggc	cctccgctat	tttgagagac	6660
aagatcggcc	tggtgactac	aatttgctac	caagacagat	tcgctgaata	tccgcaagca	6720
agcaagctgc	atcatcaaaa	cataaataac	gaccaaagaa	tacacggagt	agaagaaagg	6780
aaggaccaga	acaagttggc	gattttccaa	cttggttact	caccaagcc	gtcactctgt	6840
tcatatcatt	actcgccttc	cagtgtcttg	cccaccttgt	ttcaatattg	tcgtcgagca	6900
aaatgacagt	agatacgatt	acttcgactt	ctaacgggaa	ccaagatgtt	ccaaaggagt	6960
tcttcccaaa	agaattcgaa	actcagcttc	tccatgttgg	gtaggttatc	gcgctcata	7020
tgacggctct	ctatcccaga	actaatcagt	ttgcgattca	agccggttcc	cggacatttt	7080
aggcagttgc	gcggtgcctg	tatacagttc	ggcagtaaga	tcaagccacc	gcctcctcga	7140
aaccaccaa	ctatgccaca	tgtactgaat	tcttttccct	ttttgcgcat	cttgataggc	7200
ctttgagttc	aacagcgttg	cccacggtgc	gcgtcttcta	aacttgacgc	agttcggcaa	7260
catctacagc	cgttcacca	atgtttgtct	ctttctcctt	ctccctcatg	actgcttttt	7320
taacgaggac	acaagcta	aaaacaaaac	catccttcaa	cagcccaccg	tcaatgtatt	7380
gcaaaatcga	ctggccgggc	tggaaggagg	cgtcgctgct	tgtgccgtcg	catccggctc	7440
tgcggcggta	gtcgtgacgg	taatggccct	cgcaggcggt	ggcgacaact	tcgtctcatc	7500
ctttcaagtt	catgctggca	ctttccacca	gttcgagagt	ttagccaagc	agatgggcat	7560
cgagtgccgc	tttgtgaagt	ctcgagaccc	tgcaactttt	gcggcgcca	tcgacgacaa	7620
gaccaagttc	gtctggcttg	agaccatcag	caaccctggc	aacgtaatac	tagaccttga	7680
ggcagtctcg	atggctctgc	acaccaaggg	cattcctttg	attgttagta	tcccaatgaa	7740
aactgtccgt	cccatagggg	gggttggggc	taaaattcgg	ggggatgtgg	ttcccatcca	7800



agattttagt gcgataacac ctttggctgt gccgggtact tttgtcgtcc catcaaccac	7860
ggcgtcgata tcgtcgttca ctcgccacc aagtggatcg gcggccacgg cactacggta	7920
ggcggtgtca tcgtcgacgg cggtagcttt gactggggcc agcaccggga tcggttcccc	7980
cagttccatg atccacggac gcgactctgg gaacgctttt cccgtcgggc gtttgctgtc	8040
cgctgccagt ttgagatcct gcgcgatacg gggagcacc tcagcgctcc tgcggcccag	8100
cagctgctgg ttggcctcga atcccttgcc gtgcgctgcg agcgccacgc gcagaatgcg	8160
gccaagattg ccgactggct gcgtgagcat cccctcgtgg cctgggtcag ctatgttggt	8220
cacccgaacc accccgatca ccagggagcg ctcaagtacc tcaagcgagg ctttggctcg	8280
gtcatctgct ttggtctacg gggggggttt cgaagcaggt gccctgttct gcgatgcgtt	8340
gaagatggtc atcaccacta ccaagtgcgt aattaaacta gccccttctt ctcccgagag	8400
agcatcgttc tgccattcta acctcgcttt gcagcctggg ggatgccaag accctgatcc	8460
tccatccgc ctcgactact catgagcact tcagttccga gcatcgagct gaggctggcg	8520
tcacagatga tatgatcagg ctgtctgtgg gtattgagca gatcaaggat atcaaggccg	8580
acttcgagca ggcctttgag caagtgcctt cgggtaagaa gagtcttcgt aagccttgca	8640
tcggaaagat tctcttgag gatgagatca atgaagactt atttggaacct tcagcttgtc	8700
gtgacgtaaa taggggtcat tgcgaggcat ggtaaagtgt ctaccagaag tggcatggaa	8760
gtattttcca atagacctgt aattcacggt tgctacgttt tttcatactt accatgcgga	8820
tttattttga taatatttct ttaagtgtgc agaactcgta gtcacttaca aagctaattg	8880
ccgtaattaa tctttagtgc gccatgtcct cttgactatc ttgtaaacga aggggcatta	8940
ggcgtgcttt gctttgtctc tcctcgtgtt ttttaagttt gctatattaa cttgaatatt	9000
attactaact agatgctagg ctttttacta ttacaaaca cctgtaacaa tcagcgcggc	9060
gttaggcaac tgcagagatt attttactat agtatagact ataatgccat actttaatta	9120
atcttcagta cgctatgttt ttttactat cttgtacaga ttaaacaag gccattagg	9180
catgtgttgg gagcataaag gcaaagaggt caagagacagg acaaccgtat agtgaatcct	9240
tggatgacta agcgtagtgt cctagctagt agatctcctt aagcgtgcta cagcttgta	9300
agtcacgtta gctagagtct atatctaatt agataaaagt acattaaaat agtatatata	9360
tttatatgta aattagctaa taatcgttat actagtaatt ttctatagta tagattacta	9420
tattacactc attaattatc ttagataagt agtacgtact tacgcggta ttaaccttat	9480
agcagggggg gctgacgtaa ggtagcttag gagtataagg gggctgtaag ggataatcct	9540

ttctttctctc	ctccagtttc	ttaatactac	atcgacgccc	tatcgcagtc	gcctaggggc	9600
tagtctataa	caggaggtta	gagtttgaga	catttacgca	caaaccta	ataggtagcc	9660
ttgttattag	taacaaagaa	tcttagctat	tactcggttt	taacaaacca	ggccattagc	9720
cacggcagca	tgctccactt	agtctctccc	agtgttttag	agttatacta	tgttattaca	9780
taaaatacat	atactattat	tttaaagtaa	actttcacat	tttaaaactt	attatgttaa	9840
aagtggataa	ttcatgcata	tattaacttg	aatactatta	cttactactc	gatactaggc	9900
tttttactat	ttacaaacac	ccataatagg	cggcgtggcg	tgaggcaatt	gaggagacag	9960
tctcacaata	gcagggagca	tatcacattc	atttatagta	cagatgccga	gccaaatgcc	10020
gtgcgtgac	gaaacggtga	gccaaagcgc	agcacaccat	caagatgcgg	ctgtaatctc	10080
ggttgtcact	tggaagcact	tggaagcact	cgtgcataac	gcaagtcgct	ctctcataca	10140
tggttttcag	agtttatgag	ggactagaac	agacaagtct	ggctttttga	caaggaagta	10200
gctggacaag	gttcgcaggc	gctctgaccg	agcataaacc	aatattggag	actggagact	10260
ctgccatgtc	ttcaataggc	ccttatgtag	ccttgcttgt	gtgtgtactt	gcagggatgt	10320
ttataaatat	gtgtatgttc	gagtatcttg	ttcggttttg	taaactcaaa	ctcgccagct	10380
ctcagcctgt	cagccgagtg	aattgctatt	gccattgtat	tactccagaa	cacgtatctt	10440
gcacaaactc	caatctcagc	aatggccacc	gtcgtacgag	aagcatttga	gaaccatgtc	10500
aagctggtcg	agagtcggaa	ctcgcccggc	catgtgcttg	cttcttctga	ggcctccttc	10560
tttgttgccg	acttgaacga	cattgttcgt	aagtgggcgg	cgtggaagaa	agctctcccg	10620
gatgtcaccc	cttttttttg	tacgtcctca	attcccccca	tttcatgtct	cactaagctg	10680
ggaagtcccg	tccgagggtc	cgaatcaatt	gacttgagag	cagccgtgaa	aagcagctac	10740
gatcgacggc	tgatccagac	tctggccacc	tgtggagccg	gatttgactg	tgccctcggtg	10800
gaggagattg	agttgatcct	ctccttgggc	attggcgag	aacgaatcgt	cttcactcat	10860
ccgtgcaagc	ccgtctctcc	tcgggctttg	ccgcaagctt	gggatcacgc	tcatactttt	10920
tgacacgaat	gcgaagctcg	taagctcacc	atcactatcc	cgaggctcag	accgtcctcc	10980
gcgtcttcgc	cgacgaccca	accaatgccg	atcctttggg	taccaagttt	ggcgccgcgc	11040
gggaggacat	tgatggactc	gtgcgtctgg	tcaaggagtt	gaacatgaag	ctggccggcg	11100
ccagctttca	tgcaggtgcg	tctcgctctc	ggtacctcgg	ccggtgaaat	gcatgcagct	11160
cgctaacggc	ggcaattcca	cgccctgttc	tagcccctag	cgtcgctgtc	gacgcagctg	11220

catacgtgcg	gggcatccgg	gacgcagccg	aggtcttcgc	gcgggcccga	cgggtcgggt	11280
tgaaccctac	ggtgctggat	attggcgggc	gctacacaga	ctcgacgttt	caacagattg	11340
caggggcggt	caggccggcc	atcgccgagt	gcttcaagtc	gcaagtggtc	gagggacgcc	11400
ttcgcatcct	tgcggagccg	gggactctct	tctcctgcag	cccgttctat	ctagcagtca	11460
aggttgctgc	gcggaggagg	aacgcgcgtg	cgtttgggaa	tgagccagcc	acgcgtctct	11520
acatcaacga	cggcatctac	agcaacttca	tgatgcgttt	catcgtaaac	atgaccttct	11580
cgcccggtgg	cgtcatccgg	aaggggggtg	ggtacgatca	gacggagcaa	acgatgcgcc	11640
gcgaggcggt	ctctcttttg	ggccggagct	gtgactccaa	cgactgcata	aacagggatt	11700
gccggctcga	tccggaagtg	ggggtcgggg	actggcttgt	cttcaaagac	atgggtgggtg	11760
agcgtctcaa	cttttcccc	cttttccttt	tcgttttttg	gtccctgtgg	agaatagcat	11820
atgtaggagc	taaccatgca	tggtgggcag	cctacacaac	ggtatgtaac	accaccttca	11880
atggcttcac	cagttccaat	cacacaatct	acattgaacc	cacccaagtc	gacaaagccc	11940
agtcgacctt	tgaacagttg	gagttggcca	tctgagtgcc	agttcgggga	gacccacacg	12000
cggcacgtgc	cgtcccgggt	tcccgggcgt	ggctgcatga	cgctagacgc	gctagtctag	12060
tacctactcc	gttccgtact	gtccttgcat	cagtccgtag	tcacaacaga	tggtctggat	12120
caattgatgc	aaactccctg	attagcttgt	ttgacacatt	ccatttggct	tcgtgcacat	12180
catgatacaa	ccagtacatg	tttcctccag	tccttttgta	catggccacg	ccgagctctt	12240
gtaagtacct	cgtcgagctt	ggtcttcctg	caccaagtta	tgtacagtgg	gggtgcagat	12300
gtaagggtgca	gatgtaagga	taaccacaaa	aattagtcct	gttaggcaaa	atgaccttat	12360
aatttaaata	aatagctaaa	taaaatatat	aatatataat	tatactaaga	agttatttct	12420
cttttaccta	tattacttaa	aactttatat	taaacccttt	agcgtgtgaa	ataaattaag	12480
ttaaacctaa	gataaaatcc	ttcattatcc	tcacatctgc	acccccactc	taggtgccgc	12540
gctcccggag	aaggggtcca	ccccaaagtca	ccccgagaac	ggtaaaaatg	acgacatatg	12600
gcggaacccc	cttctcttag	cgacaatcgc	aatgagacgg	acaagggtaca	acgacctgag	12660
tttctgaccg	actggcataa	gtgctcatga	ttgaatacta	ggtagcagac	tgtacggact	12720
tagttcgttg	tttcagtgca	aatcacttca	ctactacaag	cctcaggcct	ccgtcgcctc	12780
ctacatgacc	gttgctgctg	tcttgcgctc	atactcaaga	gcaactcggc	gggccagcca	12840
ctgccctgcc	gtcatccggg	ccttccactc	gagcgtgctc	cactttcctt	gcttctcgca	12900
gccaggcaga	ggttcgatca	tctcgtccag	attcaagtgt	ccgaagaaga	cgagcgagta	12960

gcgctgcacc agctcgtcat cgtcaccggc acttccttcg tacatgtacc ggctcggcgc 13020  
 cgtgacgcgg tggagggcgc tccgccatct gccgttggtc tgcttctcaa gcaggcccc 13080  
 aacttgaaca atcatagccc ccttgatcgg aggcacaggt cggtaaagt cttcctcgta 13140  
 gtcgtgcagc tcaagcccc cgaccatgtc ctggaagagc atggtgaact ggcagtagtc 13200  
 cgtatgcgcg ttgagccggt tcgcggatcc gctggccagc tgtgaaacgg gctgccccag 13260  
 gaagtagttc caagttgagt gggtgctcat gtggcgcggc tcaaactttt ttccaatgta 13320  
 atccagatcc tccatcccga ggatttcgca cagcagccgc atgttctgga gagattgctt 13380  
 gtagcaggcc gcgaaccact tcttcaagaa gtcgagaaag cccgggagat gctgctccac 13440  
 caagtttaga tcgggggcgc ccggggggta cgttcgcga gggtcctgca gctccatggc 13500  
 ctctttgagc tccgtcggcg tctccttgcg gagcctctcg atctcgtcgg gatcccagac 13560  
 gccctgcgag gagatggcct cgcctgtgcc cgtccagccc tggaaatgct ttgatacgtc 13620  
 aggtgggatg tgaaccgagt tcttgaccgc cagaggcagg tcaaaaaact tcttgactg 13680  
 catttcaaaa ggcacacaag atcaattagc gacctaact tgcattggga atgccagccc 13740  
 attcttgagt aaccaggcca gctacttacc caggcgaatg cttcctcgag cgtcctagtt 13800  
 ccaatactgt ggttaataac gtagatggct ccgtgatggc tccatgcctc gtcgagctgt 13860  
 cgcaagtatt tcttgcgctc attcccgaca ctggcatgga ttgcctcaaa gtccatcact 13920  
 ggcacattag caggcttaac aggcttggtt gttaccgtca tcttgggagt tgaacagata 13980  
 gaatcttgat gttgaatttg ggattagtgc ctcggaaaga gtgaggaatc gtgatatgtg 14040  
 gagcggatcg ttaaataaag gctttgagga ggtcatttat aatagtgtca acaagctgat 14100  
 ttatcacact gcaatcctgc atctatatga cacggtctct attattggag gggctcttta 14160  
 atgcgcatac cgcattagtc ctggaacaaa aggagtacct ttccacttaa tcccttacta 14220  
 aatatactag ccatcttttag tagtgaatat aagtggctta atataatgct tatagcctct 14280  
 tctatagaaa attgctttct ttttactatt atcaaagcct tataatataa cgtaatataa 14340  
 cgcaataacg taacgtaacg caatgtaacg caatataacg taatgcaata aggctctttt 14400  
 taaatactcc ttattatatt attctttaag atagctattg tatataacta tagaaaattg 14460  
 aattcatatt attaatactt agtaagtcag tgaggggtta atagcaaaat aaattcataa 14520  
 taattcttca aggtatatat aataaagact taattattta atttaatact agtatagtag 14580  
 taattataat agctttaata atattaatac cttttaatat cttatatgta agcatcttcg 14640

ttaatagtca	aaatcaatag	acgcaagcca	cactaaagtt	aggtgtgtag	gactaacgct	14700
atatgcgcat	ttagtgacct	taatcaacgg	tttcaaagtg	gtatgatctc	attagattct	14760
cggggatcct	cttgaggggac	acgatacaaa	tcttcttgag	ctacgtttgc	catcgttatg	14820
agaagtggct	gacaagtact	tcgtaattta	agagcatcgc	gtctggcgaa	ttctacagac	14880
acggaacgtc	agtgacacca	aacccattca	gccacccac	aaaatctcaa	ttcgactgta	14940
ttttctaacg	atgctcgatg	aaagcccaat	gaggaagggt	gattctgtga	gcaacgacca	15000
aagcaacccg	gagagcaatg	catctgtttc	aatccatcag	cagaatcaaa	tcatcacctg	15060
tgtctcccca	ggcccagtct	gccccaatgc	gatagaaatc	aagcgtgaca	ttgtgatcgt	15120
gagactacgg	cccgtcgaaa	gttgtccagg	ctatcgcttc	tttcgccgag	tctttgagac	15180
actagagaaa	tggcagctgc	aagtcgacat	gttctcaacc	agtctggggc	gaataacctt	15240
ggcgtgggg	gccgcagcgc	tgcaagccgg	cattagtgc	tcatgcagtg	ccagaaatga	15300
catgatgagc	cgggatctca	tgcacggcat	gcagaagcta	ctcccggacg	atcacataga	15360
gctctttcct	cacatggcca	tcatctcgg	cgttgacac	ccgagccgac	gaatggccgg	15420
ccacatcttc	gccaccatgg	atgccaatga	tattcccacg	gtcatgattt	cgcacggtat	15480
ggcctcaatc	ctttcccggt	tccatagcaa	atcatcgtcc	cattcttctg	accagcatgt	15540
tcagacgccg	ccaggctcgg	tatagcctgt	gccatctcgg	agcagtacac	tgctaaagcc	15600
ttgtgcgtct	tcgagcaatg	cttattccgg	tactccttga	cacattgaac	cgttatctca	15660
gtctcttcat	caaaactctt	ctcgttgacg	aattagatag	attagatgca	caagacactc	15720
gttgtgggct	atggtttttt	tgccgtgata	gacagctaaa	actaaaacct	cattgtagtt	15780
acaagcagct	ttagtacttc	ccgtgatact	gacttttctt	tagcagctga	tcgaccactc	15840
tagtgacaac	aacgttcaag	attccttcgg	atctagtgtc	tctgaagact	aacttccacc	15900
gagtcctagc	tcctggagaa	gactgtcgcg	caccatctcc	atgacgggag	ccagaaagtc	15960
ttccgtatag	tatgcatcat	tgtagtacia	gtacagccgc	atagtgccgc	ggaaggtaaa	16020
tagctggaac	tcgatggttg	gatcagtcgt	tgcatcgacg	agggctacgt	cttcgatctc	16080
acaacacagg	gcttgtgccc	cctttttccc	gtacgcgcgc	gctagatata	tctccaacac	16140
gccgaggcta	ctgagggttg	gtacccggaa	gggcggacag	ccggcaacgg	gcaaggagcc	16200
aaggaaagcg	gcctcccggc	tttcatacag	cggcagcagc	tcgagaaagc	tcacagggtc	16260
gcctgccggg	tctgaggggca	gcgccgacag	atctcgcgag	taaacagcac	ccagacgttg	16320
cgtgagggtcc	tcgaagccac	ccgtgagaca	gaacggcacg	acaaagatac	agaggccgag	16380

tgcgtagtcc	ggaacaaccc	acttggggtc	cagaagtgga	cgaggttcg	cgacgagggg	16440
aatgagcatg	ttgcgcgctc	cggtgtgctg	ttgttgaggg	aatgaggccc	agacgcggac	16500
aatactcgcg	tggacggcgg	ccgagacgct	cacgcccagc	ttcttgcaac	ccgccacgat	16560
ggcctcgagc	gtcggctcgt	cgaacaaagt	caccaggtgt	tgggtgttgg	caggcgcggc	16620
gtcctcggac	ccctcacgca	cggggagaga	caagctgtac	aaaccatgat	gccaatgccg	16680
catcagctca	tcgacggcac	gctccacgcg	gtgtgggacg	ggtgtctcct	gcggcgggaa	16740
ccccagaata	tagtcgatgc	cgggcgggag	ggacggttgt	ttgacatcgg	tagtgtagca	16800
atctaggttg	gcgtcgaggc	cgagacggaa	gactgactcg	agaccgagca	tgaaggtgtt	16860
tgtcgccttg	tatattccca	cagcgtcaaa	tcggaggtga	gtgctgcgaa	taatcaaggt	16920
cgacgaagga	ggaaaccagt	aggccattgc	cgttggacga	ggttgaaaaga	tctttccggc	16980
atcgtccacg	tccctgaaaa	cagcctgggt	cccttggttt	actgtggaaa	cttagccgca	17040
gccactcctc	aggatccatg	aggggaaccg	taaccaggta	ccgccctgtc	tcactctggt	17100
ctgaataggg	cggatatatt	gcgcctatga	gcggctggac	atatcgaaaa	acaagccaag	17160
cgcggcggag	gtaggggatg	gggtcatcaa	tgtcttgggg	cagtcgtaat	ttgagcttgt	17220
aggtgagacc	ctcggcttca	cgaccaggag	gcgtgttggc	gcgttgata	cgggcaagca	17280
gccagttctc	caccaagtgc	aggggccgtg	tgagagagcc	gtcttctgat	ctgggtccatc	17340
cgggagcgac	aatggcatga	ttccctgggc	tggccatggc	tgctctgcct	gttaagaaca	17400
gcggggatag	tctgggagag	taaagcagtg	agggtatttg	gatattgacg	acgaaaacct	17460
tgcaatgtaa	gaagtaagtt	tcaaaccagc	accataggca	agcctcctat	ttgggcgact	17520
ttaccgaatt	tactactata	tcttagggac	atctaaatgc	gctaccgcgt	tttttgaatg	17580
cgctaccgcg	ttagtcctaa	aacagaagaa	gtaccttttt	acctaattac	ttactaaata	17640
tactagccct	ttttagtaat	aaatgctagt	agcttactgc	aatatgcaat	gcttatctcc	17700
ttaagcgtgc	taaagcttgt	gggtctataa	gccctgcaaa	ttgtatatat	ctcttgttta	17760
cttttatcta	attagatata	tatagaccct	agttaacgtg	actccacaag	ctttagcacg	17820
ctttaggaga	taacctttcc	ttttcttcct	ttttattatt	ataaagtctt	ataacgtaac	17880
gtagcgtaat	gtaatgtaac	gtaataaggc	tttaaataatc	gcataaatag	gcactttaat	17940
taacagcgaa	aatttacaga	tgtaagctac	actaaaatta	ggtgtgggga	ctgtctttcc	18000
gttttaggac	taacgtggta	tgcgcattta	aaaaacgcgg	tatacgcat	tagaggtcta	18060

atttcgaacg	tttttcatta	tctccttggg	ctctgtccac	cttgtgagtt	agtggggccc	18120
ccacaggccc	cctgctataa	ggttagtaac	cacgtaagca	cacgaacgta	tagtgtagta	18180
atztatatag	ggaaaattag	tagtatattt	actattagct	tatttatata	taagcaaata	18240
tacctttaat	ccacttctac	ctaattggat	atagacccta	gtaaacgtga	ctccacaagg	18300
tagacagagt	ccaaggagat	accaatctac	ccctaccttg	acaactataa	atcccttact	18360
tacttataag	atattaaaag	tattaatttt	gttatttatg	gttatataaa	atagctatat	18420
cttaaagaat	aatataataa	agggcattaa	aaaagagtct	tattgcataa	tgttacattg	18480
cattgcgtta	tatttgtgat	aatctaggct	ttggctagac	ttagtaatat	agttgttgat	18540
tgcgtaattt	aaagggactt	gtttcacgcg	tatccttttg	ctatggtgca	attggattag	18600
gcacatcacc	cgtacacgtg	ctcgcagaca	tccgcgatag	cccctcaggc	tacaccgtaa	18660
taaaattgca	ttatattgcg	ttacattgcg	ttgtgttgcg	ttgcgttata	ttataaggct	18720
ttttataata	ataaaaagga	aggaactcct	ctattgaaaa	attgataggt	attatagtaa	18780
gccacttata	tttactactc	ataagagcta	gtatattcag	taagggttta	ggtaaaaata	18840
tgtacttctt	ttctcctagg	actaacgcgg	tatgcgcatt	taataaccct	aagccaatta	18900
taaacacatg	tccgacttcg	cattcgtcac	tttcggcggg	gaatcatcag	agcacacttg	18960
cctcatcgctg	gtgggtttga	tggccaaaag	gaattcggat	atcagccttg	cccgcagcgt	19020
ccgtgccgcg	cggggagtct	tgctctctct	ttgggtctgt	ccaatgtccg	gcgacctgat	19080
catatgatca	taatcacaca	cggagcaccc	ataacctggg	gtcaatatat	aagtcagccc	19140
atgtgttctc	aaaggggctt	tctagtgtcc	ccatcgccgg	ggacttgatc	tcgtagcaca	19200
cgcaccatcc	cacccattgc	cgccgacggt	tcatacacia	cttgatggat	ctgacccagt	19260
tcaacacagc	gggcatcggt	tggccgacgg	ttgctgccat	cgccatctcc	tatatcctgc	19320
tgtcgagctt	tctctcttgg	tataggctac	ggcacatccc	cggccctttc	ttggcctcga	19380
tctcaagtct	ttggaatggt	ctaaacatcg	tgactgggcg	cacgtcgcca	gtgctcgaga	19440
aactgccagg	aaagtacggc	ccgctggtgc	gaaccggccc	caactacgtt	ctcacagatg	19500
atgccgaaat	tttacgtcac	gtcaatggcg	ctccagcaca	tacccccgta	atgggtgtaa	19560
gtctgtccat	atcacatgtc	ttttgaaatg	tagggagact	cagagacca	ctcacactgt	19620
ggcttccagg	gtatgaaggc	ttcaaggctc	atgaacacga	ccatatgggg	tcccatatcg	19680
acacgtcggg	acatgacgcc	atcaaaaagca	aggtgattgg	ggggtacaac	ggcaaggatg	19740
ggatagacct	cgagggggcc	atcggatcgc	aggtcaagac	cctgggtcagt	gagatccggc	19800

gccgtcacct	tgggcaacct	gtcgacttct	ctcgtctgat	gcgtcagatg	gcgctcgacg	19860
ccatcaccgc	cgtagccttt	ggcgaggccc	ttgggttcct	gacggccgaa	gacggagacg	19920
tgttcggcta	cgtcagcgcc	gttgacaaga	tgctgaccta	cctgacactt	gccagcgacc	19980
tgcccgtagt	gcgcagcggt	gtccgggtcac	gccgcatggc	gccggcggtg	cgttgcgctcc	20040
tggcctatac	tggcattggc	cgcatgctca	accatacacg	ccgggtgggtg	gcggagcgct	20100
acgcggcccga	cgacccccggg	aagggcgaca	tgacggcctc	attcatccgc	aaggggctca	20160
cgcagatcga	gtgcgagggc	gagagccacc	tgacgctcat	cgccggcgcc	gacactgccg	20220
tcacgggtgct	gcagctccac	gctgctgtac	atcatgacga	cgccgcgcgt	gtacacgcgg	20280
ctcaaggccg	agatcaaggc	cgcggtggat	gccggcgagg	tggtcgaggt	catcaccatg	20340
gcccaggccc	agaggctgcc	gtatctgcag	gctgtcgtgc	tcgagggctt	ccgcatgcgc	20400
ccggccgtcg	tgtacgggca	cttcaagtcg	gtgccggccg	gcggcgatac	gctgccgaat	20460
gggtgtacgcc	tgcctgcagg	caccgccatc	gcccccaact	acatagcact	gacccggcgc	20520
gccgacgtct	atggcgccga	tgtcgatttg	tttcggcccc	agcgtttcct	cgacgccgag	20580
ccggccaagc	gccacgagat	ggagcgcgcc	atggacctga	acttcgggct	tggccgctgg	20640
cagtgcgctg	gcaggaacat	tgtctctcatg	gagatgaaca	aggttttctt	cgaggctcgg	20700
ggatgtgcat	ctccgctctt	tgtttttggt	tcttttcctg	ctattactct	cgccctcctt	20760
tgctatcctg	acgcgggcga	ggtatgagac	gagatgagag	actgattcaa	tgcgcagtta	20820
ttacgccact	tcgacctcca	gatcttgtat	ccgggcaaag	catgggatga	atacacgtaa	20880
ggcctttctga	aacctttttt	aatacctttc	gcgcataggc	gtctcgggtg	gcgtgagcag	20940
cgtgccatgg	atattggagt	gctaaccagg	ttacctctta	cctctgcagg	ggctgtggta	21000
tattcgcagc	ataacatgtg	ggtacaaatc	accgagagct	cgtgagagag	cgcaaagggtg	21060
agtatagtgt	acagggatac	acatggcagg	ggtggctacg	aacgtccatg	accacgtacg	21120
aggcgggtacc	gatgggcggg	aaaggacacg	actgagacgg	ctggagagaa	cgatgaagat	21180
ggggtaagga	attatagcaa	tcagaataac	gatcgtgttt	gtgcgcgtcg	ggctttgcct	21240
cgcactgcct	acctaaacaa	gtcccgaagt	gatgaataaa	attcggcctc	ggtgccttcc	21300
catttgctct	gagccaccaa	tgaagaatca	acttggttag	aaaccctcct	cgccaagacc	21360
atattactag	ctgtgataag	caccacctgc	aaatgctgta	ggcagcttgt	tattttaaag	21420
gccgacaaac	cgcagcatct	ttgggttagct	gggatttagt	ggtgccacct	atatgagtcc	21480



gcaatctatt	gtcccatctc	cctgttgagt	atctcttcgc	atattacctt	gagagaattg	21540
ccggccatct	caaaatcact	gacctccaag	tatacttgcg	cacagagtct	agcccatatc	21600
catccgcggt	aatcgatgat	gggtatccag	gtcttgatc	tttccgccag	agcctttgtc	21660
aagtaacgaa	ctgccggggc	gacctctttc	tccgtcagag	cgccgcccgg	cacatgagct	21720
ggggcagtgg	acgggcccgt	ggcaatggcc	aagggaagtc	gcactgtcac	gatgccgcag	21780
tttctcatct	ggccatctac	cccggcccca	agaccaggct	cctccaagac	ctctgtctga	21840
agaatatcgg	cgatcttgtc	accaccctct	ttcgcgagcc	actttatgta	ctcgtaaatt	21900
gccgcctcgc	caccacagac	gtctcgctg	aagcggaggg	cgcccgggat	gcacagatgg	21960
ggcatgtaat	cgctcgtggc	agtgtaggcg	aacagtgtct	caaacgaaga	cgccgtttcg	22020
ctggcactga	ccatctgcga	ccacagggga	agtcgagagt	tgccattctt	gggaataaat	22080
ccgaaagagg	tcgggatgac	ggagcgcac	atgtgctggt	tgcgctcggc	aacgtatagg	22140
acagcacaag	gtcgaggaac	aaataaccac	ctagtaagat	caatgcgtag	agtatcagca	22200
tggaaccgcc	gtattaaggg	cgtgtgtgac	gttgatctg	catacttggt	gcaatcagag	22260
acgaagaagt	caggctgcag	ctcctggaga	ttgacctga	actggccac	gctatgcgcc	22320
ccgtcgacca	acgtcatgat	gccttccttc	tggcatacgc	gcagcaagtc	ttcgaacggc	22380
atcctaacag	cagggatgct	cactatcgtc	tctagaattg	ctaggcgcg	gcgtagaccg	22440
tcagccctga	tttgggccat	ggcagtctca	aactgggaca	caatcttttg	gcccgtcgtg	22500
gggagctcaa	actccaccct	acgtgtcttg	aagggccgag	tctcggccaa	ggaagtgatg	22560
ccatggtcga	tggcaccgta	agtagttgat	agagtcacca	cgacgtccc	ttcctcaaat	22620
gcctggttgt	aaaggacggt	gaagatacca	gtagtgcgt	tggagacgag	gacgcactcc	22680
gagacggcgg	catgaactag	atgagcgagg	ccgatactgt	gcctcctgca	gcaccaagcc	22740
ttgggaaaac	tcggagaaca	agtcgggctg	ggcctccagc	agggaccagt	aatctctgat	22800
ctgcttgctc	accaccttgg	gcatgaccc	acaagatgct	acgaccacgt	cttgtagtt	22860
cagatacagt	caacatggaa	attgaaacgg	gcacatcgtg	tgacgggcaa	ctgacaagaa	22920
ttgaggttgg	tgtattccgg	atccatgcag	aaagcctcca	gcataggctt	gccgaatggg	22980
atacgcttgc	tgttcaactgt	catcttgaca	aggcgatgtc	accgaacaag	taaattggaa	23040
tcagtgcgag	tagagatgcc	agcagcactt	ggtgaaaagg	gacacgtcaa	gttaaagcac	23100
acggctggca	ttcttatgat	ttacccaatg	ggactaaaat	caccccatcc	acatcccgtg	23160
gttgattagt	agctgagcag	accacatgca	ttgtgtgggc	ggggtgataa	tatgcaagga	23220

cacgtctatt	cgcatctcat	tcttttattt	acatatgtcg	tttgatcatt	ggatgcgtct	23280
ggtcaagcgt	gcatatgtat	gcttgccctct	ggaaaagttc	atctttctga	aagggcagtc	23340
agatatttaa	taaacttcat	tactccaacc	catacccccc	ttcgtcgaag	ctctctaaat	23400
aacagtccaa	cctacgagac	aatcacggtg	aagccctctg	tttcaactaa	tccatcatga	23460
ccgctgcttc	ttccccctcac	ccaggcgtct	ctgcagagga	catcgaattc	taccaagcca	23520
acggatatct	tcgcctgccc	caagaggctc	acggcctggt	cgacgacttg	gcaaagttgc	23580
aggcatgggt	ggcagaaatc	tcccagtggg	gcctggaaac	ggggaaatgg	cgacattact	23640
acgagacgac	gaatggcaag	catctttctct	gggggacgga	gaagctcatg	gaataccacg	23700
cgcccatgcg	agacctgatt	gctggcgagg	cacctctcac	actgctcaag	tcgctgacgg	23760
gcaaagacat	ggtgggtcttc	aaggacgaga	tagggtggaa	actcccaggc	gggaaggggg	23820
cggtcctca	cctcgaccgg	cccgctact	ccatgtttgc	ccccgagttc	atcgagatca	23880
tgatcgccgt	cgatgcccac	acggtcgaga	atggttggtt	acagtttgta	ccaggctctc	23940
acaaggaggc	agtcccgatt	tcggccgacg	gccgcattgc	atcggcgtgg	ctagagggca	24000
aggagtcat	ccccatggtc	ctcgatcccc	gcgacgtctt	gatcttcaac	gagagcatgg	24060
cccacgggtt	ggatcctaac	aagacggacc	aaagacgtgc	agctgtcttt	ggcacctacc	24120
actttgaccg	gtcccagccc	gacctgcggg	acaaattcta	cgcccaccgg	ctcatccaca	24180
gccccccaga	aaacggtaag	gcttttcctt	ggccagatga	tgtttgcatg	tttgagggcc	24240
aatgctaaca	tgatgcgtga	ccaatctcac	gtagcctggg	ttgaaacagt	ggaagcgag	24300
acttgacaag	aacgatacgt	ataacgtagt	ctagatagca	cgcacaggaa	gttagttacg	24360
aggtaggggg	tcgaaatgga	acttggcatt	caccatgtca	aatattgtct	tcgctatagg	24420
caagcacatt	tgcacagttg	ttgcgtctta	ttgttcgtgg	ccggtgtaaa	atcacacgcc	24480
cgtctttcaa	tacctagagc	acgtttgcac	aatcccgtat	ctcctgtcct	tggaactttt	24540
acattctggt	agatatagca	gcctcacatc	ttaggcatca	ctcctataat	accttccttc	24600
ttcgtggcta	gttatactgc	cttagcaact	agggcaaaga	ccctctttta	ggcccttata	24660
tatagcctta	ttaattaatt	tttaattttt	tttgggggta	ttagttagat	ccaatgcac	24720
taatataaga	aaaacataat	tactagcgat	acctagctag	tataacaatt	aacatataat	24780
taatattaac	tatagtaata	aataaaaccc	tatataagaa	taagctttaa	gattataaat	24840
atagggggct	ataagggttag	attaaagttt	ataataaaact	ttatagctat	attagcataa	24900

gatatagtta tagtttataa ctatagttaa acttaaattt atttaagttt tacttatagt	24960
ataaattaat ataattcccc ctttctttat aactataattt attcttgtga gaacaaagga	25020
tagctaggta tgagacggtg tggaaagtga taatgatgta ttcagctatc taggctattc	25080
acacatgtgg cataacaagg ctataggtat aagggtaaag aggtcttta ctctaagtcc	25140
taaggtaacta taatctatag taacctataa ccttaaataa ggaagttatt ataagtaata	25200
cctaagatat aaggctacta tatttaacac taccctagt aaaatatcta gcctaaagat	25260
aaagctataa atataactta ttactaaga tacttacttt actaaagtat ttttatntaa	25320
tataaagtct tataccttta ttatntt	25346

<210> 16  
 <211> 16397  
 <212> DNA  
 <213> *Neotyphodium uncinatum*

<400> 16	
tataagcttt tattatagcc tatagtaatt ttataaagta aactagctag ttcttatacc	60
ttaagaatta caggagggtta cttatcttat aaatttataat aaaaagatat ctccttcggt	120
ttaggcctag ttattactat ataattgaaa aatcactact gcatgtttac gtgttgcttg	180
acaagacctg tggatccggg tccaattacc cctacaggtg tgtaagagga catctacatg	240
taaacacgca tctgtcaaaa attgaacacg catctgccgt tagtaatgca gcccgatta	300
ttaatgcaga gaaactaacc catagtctct taatattaca cattataata ctataacaat	360
cgcttctttt tattccttta ctattatatt attccctaag atatagctat tgtatactat	420
tatagaagct atgggttaatg ctatttagat tgtagacgc aagccacact agaaacaggt	480
aggtaggtcg tttatcctga ttaggactaa cggcagatgc gtgttcaatt tttgacagat	540
gcgtgttttag aggtccggcc taagatggac atgaccaacc ggctagatcc ctgtcattgg	600
ctttgcctgg ccctccgctc tcttgagaga caagatcgac ctggtggcta taatttgcta	660
ccaagacaga ttcgctgaat atctgcaagc aagcaagctg cattatcaaa acataaataa	720
cgaccataaa ttacacggag tcgaagaaaag aaaggaccag aacaagttgg cgattttcca	780
acttggttac tcacccgaac cgctactctg ttcatatcat cactcgccctc cagtgtcttg	840
cccaccttgt ttcaatattg tcgtcgagaa aaatgacagt agatacgatt acttcgactt	900
ctaacgggaa ccaagatgtc ccaaaggaat tccttccaat tgaattcgaa actcagcttc	960
ttcatcttgg gtaggttata gcatctcata tgacggctct ctattccaga actaatcagt	1020

ttgcgattca agccgattcc cggacatfff aggcagttgc gcagtgcctg tatacagttc	1080
ggcagtaaga tcaagccacc gcctcctcga aacctaccaa ctatgcacat gtactgaatt	1140
gttttccttt ttgcgcattc taataggcct ttgagttcaa cagcgttgcc cacggtgcgc	1200
gtctttctaaa cttgacgcag ttccggcaaca tctacagccg cttcaccaat gtttgtctct	1260
ttctccttct ccgcgatgac tgcttttccc tgacgaggat acaagctaataaaaacacaaac	1320
catccttcaa cagcccaccg tcaatgtatt gcaaaatcga ctggccgggc tggaaggagg	1380
cgtcgctgct tgtggcgctg catccggctc tgccggcgta gtcgtgacgg taatggccct	1440
cacaggcggtt ggcgacaact tcgtctcatt ctttcacggt catgctggca ctttccacca	1500
gttcgacagt ttagccaagc agatgggcat cgagtgccgc tttgtgaagt ctcgagaccc	1560
tgcagacttt gcggcgggca tcgacgacaa gaccaagttt gtctggcttg agaccatcag	1620
caaccctggc aacgtaatac tagaccttga ggcagtctcg acggtctgcc acaccaaggg	1680
cattcctttg attgttagta tcccaatgaa tactgtccat cccatagggg gagttggggc	1740
taaaattagg ggggatgggg ttcccatccg ggggatttta gtgcgataac acctttggct	1800
gtgcggggta cttttgtcgt cccatcgacc acggtgtcga tatcgtcgtt cactcgggca	1860
ccaagtggat cggcgggcac ggcactacgg taggcgggat catcgtcgac ggcggtacct	1920
ttgactgggg ccagcaccgc gatcgcttcc cccagttcca tgatccaagg acgcgactct	1980
gggaacgctt ttcccgctcg gcgtttgctg tccgctgcca gtttgagatc ctgcgcgata	2040
cggggagcac cctcagcgcc cctgcggccc agcagctgct ggtaggcctc gaatcgcttg	2100
ccgtgcgctg cgagcgccac gcgcagaatg cggccaagat tgccgactgg ctgcgcgagt	2160
atcccctcgt ggctgggtc agctatgttg gtcacccgaa ccaccccgat caccagggag	2220
cgctcaagta cctcaagcga ggctttggct cggtcattct cttcgggtcta cggggggggt	2280
tcaagcagg tgccctgttc tgcgatgcgt tgaagatggc catcaccact accaagtgcg	2340
taattaaact agccccttct tctcctgcga gaacatcggt ctgccattct aacctcgctt	2400
tgcagcctgg gggatgccaa gacctaatc ctccatcccg cctcgactac tcatgagcac	2460
ttcagttccg agcatcgagc tgaggctggc gtcacagatg atatgattag gctgtctgtg	2520
ggatttgagc agatcaagga tatcaaggcc gacttcgagc aggcctttaa gcaagtgcct	2580
cggggtaaaa agagtcttcg taagccttgc atcggaaaga ttctcatgca ggatgagatc	2640
aatgaagact tatttgagcc ttccggcttg ctgacgtaaa taggggtcat tgcgaggcat	2700
ggtaagtttt cctaatagac ccgtaattca cggttgttac ttttttcatt tttgccatgc	2760

cgaatttatt	ttcataatat	ttttttttca	agtgtgcaga	actcgtagtc	acttacaaag	2820
ctaaatgccg	taatcaatct	ttagtgcgcc	atgtcctctt	gaccagagct	ttgcacttgt	2880
gtagtgtagt	atTTTTtGta	gtatTTTTta	tttaatttta	tatctagctt	ataattaaag	2940
gtattatcct	aggaattacg	taatcttatc	tagcaaagtt	ctaagaaaaa	taccatatat	3000
aagggtaggt	ctaagagtgg	gttatcgccc	tacaaattag	aaaaactaca	tttgtagtga	3060
atTTTTtagcg	gtaaagctag	atatTTtagaa	aatgtgttac	aaaataaaga	tctttgatta	3120
tttaagcagt	tttaccttat	gcctagtaag	gggtgttttg	gaattatact	actatattat	3180
taaataaaaa	atatatacta	ttatcttaaa	tagtcaatta	ttacatatta	aaacttatta	3240
tgcaaaaagg	tggagatTTT	ttgcatatct	taccttaa	attattacta	cttaatatta	3300
ggctttccac	tgtttacaaa	cacctaa	aggcggcgtg	gcattaggca	attacggaga	3360
ctgtctcgct	atagcacgga	gtatatcaga	atcatgtatc	atacagatgc	cgagccaaat	3420
gccgtccatg	atcgaaacga	agccaaagcg	cagcacgcca	tcaagatgcc	gctgtaatct	3480
cggttgtcac	ttggaacac	ttggaagcac	tcgtgcataa	tgcaagtcgc	tctctcatac	3540
atggcctaca	gagttcttga	gggaccagaa	cagacaagtc	tgaacttttg	gcaaggaagt	3600
agctggacaa	ggtttgacga	cgctctgacc	gatcatagac	caatattgga	ggctggagac	3660
tctgccatat	cttcaatagg	cctgatgta	gccttacttg	tgtgtgtact	tgcagggatg	3720
tttataaata	tgtgcggggt	cgattatctt	gttcggTTTT	gtaaactcaa	actcgccagc	3780
tctcagcctg	tcagccactt	gagtgaattg	ttattgccat	tgttttactt	cagaacacgt	3840
atcttgcaca	atTTTcagtc	gcagcaatga	cgacagtcgt	acgagaagca	tttgagaacc	3900
atgtcaagct	ggtcgagagt	cggaactcgc	ccggccatgt	gcttgcttct	tctgaggcct	3960
ccttctttgt	tgccgacttg	aacgacgtcg	ttcgtaagtg	ggcggcgtgg	aaggaagctc	4020
tcccagatgt	cacccctttt	tttggtagct	cttcaattcc	ccccatttc	atgtctcact	4080
aagctgggaa	gtcccgccg	agggtccgaa	tcaattgact	tggaggcagc	cgtgaaaagc	4140
agctatgac	gacggctgat	ccagactctg	gccacctgtg	gagccggatt	tgactgtgcc	4200
tcgacggagg	agattgagtt	gatcctgtcc	ttgggcattg	gggcagaacg	aatcatcttc	4260
actcatccgt	gcaagcccgt	ctcctccctg	gggctgtgcc	gcaagcttgg	gatcacgctc	4320
atcacttttg	acaacgaatg	tgagcttcgt	aagctccacc	atcactatcc	cgaggctcag	4380
accgtgctcc	gagtcttcgc	cgacgatcca	accaatgccg	atcccttggg	taccaagttt	4440

ggcgccgcgc	gggacgactt	tgatggactc	gtccgtctgg	ttaaggagtt	gaacatgcag	4500
ctggccggcg	ccagctttca	tgcaggtgcg	tctcgctctc	ggtatcttgg	ccggtaaaat	4560
gcatgcatac	agctcgctaa	cggcggcaat	tccacaccct	gttccactgt	tccagcccc	4620
agcgtcgctg	tcgatgcagc	tgcatacgta	cggggcatcc	gggacgcagc	cgaggtcttc	4680
gcgcggggccc	gacaggtggg	gctgaaccct	acggtgctgg	atatcggcgg	cggctacacg	4740
gactcgacgt	ttcaacagat	tgcaggggcg	gtcaggccgg	cgattgccga	gtgcttcaag	4800
tcggaagtgg	gcgagggacg	cctgcgcatac	cttgcggagc	cggggactct	cttctcctgc	4860
agcccgttct	atctagcagt	caaggttgtc	gcgcggaggg	tgaacgccac	tgcgtttggg	4920
catgagccag	ccacgcgtct	ctacatcaac	gacggcatct	acagcaactt	catgatgcgt	4980
ttcatcgta	acatgacctt	ctcgcccgcg	gccgtcatcc	gggaggggtg	gtggcacgat	5040
caggcggatc	atacgatgcg	cggcgaggcg	tgctctcttt	ggggccggag	ctgcgactcc	5100
aacgactgca	tcaacaggga	ttgccggctc	ggtccggaag	tgagggtcgg	ggactggctt	5160
gtcttcaaag	acatgggggg	tgagcgtttc	cccttttccc	cctgtggaga	atagcataca	5220
tgtattagca	taggagctaa	ccatgcatgg	tgtggcagcc	tacacaacgg	tatgcaacac	5280
caccttcaat	ggcttcacca	gctccaatca	cacaatctac	ctggaacctg	gaaccacccc	5340
aagtcgacga	agcccagtcg	acctttgaac	agttggccat	cggcccacat	acggtacgga	5400
gtacgtggtg	ctgtaccgcg	tcccgtccgc	ggctgcatgg	cgatggtgat	agacgcgcta	5460
gactgatacc	tacatgtaca	tactccggta	cgggaagtact	gtccttgtag	tagtccgtac	5520
atgctttagt	cacaacggat	gacttggatc	aattgatgca	cactccctgg	ttcgcttggt	5580
tgacattcgg	tttggttcg	tgcgcatcat	gttacagcca	ctccatgttt	cctccagtcc	5640
ttttcgtatg	ggccatgatt	cattcaaccc	gttatcatgc	aagcaattat	gtagacggcg	5700
acgccgagct	cttgcaagta	ccttgtagcg	agtagagccc	aattttcctg	caccaagcta	5760
ggtgccgcgt	ccccggaaaa	gcggggcagg	ggtccacccc	gagaacggta	aaaatgacga	5820
cacatggcgg	aacccccctct	cttggcgaca	atcacaacaa	gacggacaag	gtattacaac	5880
gacctggggt	tctgaccgac	tggcagaagt	gctcatgatt	gaatactagg	tagcagcaga	5940
ctgtacggac	tagttcattg	tttcggtgca	aatcacttca	ctgctataag	cctcaggcct	6000
ccgtcccctc	ctacatgacc	gttgctgctg	tcttgcgctc	atactcaaga	gcaactcggc	6060
gggccagcca	ctgccctgcc	gtcatcagat	ccttcactc	gagcgtgctc	cacttccttg	6120
gcttctcgca	gccaggcaga	ggtttgatca	tctcgtccag	attcaagtgt	ccgaagaaga	6180

cgagcgagta	gcgctgcacc	agctcgtcat	cgccaccggg	acttcctccg	tacatgtacc	6240
ggctcggcgc	cgtcacgcgg	tggagggcgc	tccgccatct	gccgttggtc	tgctttctcaa	6300
gcaggtcccc	aacttgaaca	atcatagccc	ccttgatcgg	aggcacaggt	ctgtaaatgt	6360
cttcctcgta	gtcgtgcagc	tcaagcccc	cgaccatgtc	ctggaagagc	atgggtgaact	6420
ggcagtagtc	cgtatgcgcg	ttgagccggt	tcgaggatcc	gctggccagc	tgtgaaacgg	6480
gctgccccag	gaaatagttc	caggttgaat	gggtgctcat	gtggcgcggc	tcaaactttt	6540
ttccaatgta	atccaaatcc	tccatcccga	ggatttcgca	cacgaggcgc	atgtttctgga	6600
gagattgctt	gtagcaggcc	gcgaaccact	tcttcaagaa	gtcgagatag	cccgggagat	6660
gctgctccac	caagtttaga	tctgggttgc	ccggggggta	cgttccgcaa	gggtcctgca	6720
gctccatggc	ctctttgagc	tccgtcggca	tctccttgcg	gagcctctcg	atctcgtcgg	6780
ggtcccagac	gccctgcgag	gagatggcct	cacctgtgcc	cgtccagccc	tggaaatgct	6840
ttgatacgtc	aggtgggatg	tgaaccgagt	tcttgaccgc	cagaggcagg	tcaaaaaact	6900
tcttgactg	catttcaaag	gcacacggga	tcaattagcg	ctcctaactt	gtatggggaa	6960
tgccagccca	ttcttgagta	accaggccag	ctacttacc	agacgaatgc	ttcctcgagc	7020
gtctcagtc	caatactgtg	attaataaca	tagacggctc	cgtgatggct	ccacgcctcg	7080
tcaagctgtc	gcaagtattc	cttacgctca	ttcccgcac	tggcatggat	tgcttcaaag	7140
tccatcactg	gcacattagc	aggctcaaca	ggcttgtttg	ttaccgtcat	ctttggagtt	7200
agacagataa	aatcttgatg	ctgaatttgg	gattagcgtc	tcggaaagag	tgaagaattg	7260
tgatttgtga	ggtggatcgt	tgaataaagg	ctttggggag	atcatttata	atagtgttca	7320
caggctgatt	cgtcgcactg	caatcctgca	tgtatatgac	acggtctcta	ttattggagg	7380
gattctgatt	aatgggatca	taaatgcgca	taccactgcg	ttctctgaat	gcatactgcg	7440
ttagtccatg	aacaaaacaa	gtacctttct	atttaatccc	ttgctaaata	tactagctct	7500
ctttagtagt	aaatataagt	ggcttactat	aatgcttata	acctcttcta	tagagacttc	7560
cctaaatgaa	attcctttat	ttttattatc	gtaaaagcct	tataatacaa	tgcaatgcaa	7620
cgcaatataa	cggaatgtaa	caaggctctt	tctaattact	ctttattatt	ttattcttta	7680
agatatagct	attttatata	taactataga	aaatattatt	aatattatta	atacttagta	7740
agtaagggat	tcatagtaaa	tagatctagt	aataattact	caaggtttca	aagtgggatg	7800
atcccattat	attcactagg	ctcctctcta	gggacacgat	acaaatcttt	ttaggctaag	7860

tttgccattg ctatgagaag tggctgccaa gtacttcgta atttaagagc atcgcgtctg	7920
gcgaattcca cagacacgga acgtcagtaa caccaaacc atccagccca cccacaaaat	7980
ctcaattgaa ctgtattttc taacgatgct tgatgaaagc ccgatgcgga agggtaattc	8040
tgtgagcaac gaccaaggca acccagagag caatgcatct gtttcaatcc accagcagaa	8100
tcagatcatc acctgtgcct cccaggtcc agtctgcccc aatgccatag gcatcaagcg	8160
tgacattgtg gtcgtgagac tacggcccgt caaaagttgt ccagactatc gcttctttcg	8220
ccgagtcttt gagacactag agaaatggca gctgcaagtc gacatgttct caaccagtct	8280
ggggcggaata accttggcgc tgggggcccgc agcgtgcaa gccggcattg gtgactcatg	8340
cagtgccaga aatgacatga tgagccggga tctcatgcac ggcatgcaga agctgctccc	8400
ggacgatcac atattagagc tctttcctca catggccatc atctcggtcg ttggacaccc	8460
gagccgacga attgctggcc acatcttcgc caccatggat gccaatgata ttctcacggt	8520
catgatttcg cacggtatgg cctcaatcct tccccgttc catagaaggt catcgtccca	8580
ctcttctgac cagcatgttc agacgccgc aggctcggtg tagcctgtgt catctcggag	8640
cagcactg ctaaagcttt gggcgtcttc gagcaatgct tattccggta ctcttgaca	8700
cattgaacag ttatctcagt ctcttcatca aaacgcttct cattgcagaa tcatattaga	8760
tgcacaagac actccttgtg ggctatggtt tttttggccg cgatagacag ctaaaactaa	8820
attctcattg tagctacaag cagctttatc acttcccgtg atactgactt ttctttggca	8880
gctgaccgac cactctagtg acatgacaac gacgttcaag cctccttcgg atctagtcct	8940
tctgaagact cacttccatc gagtcccaac tcttgagaa gactttcgcg caccatctcc	9000
atgacggaag ccagaaagtc ttccgtatag taagcatcat ttagtagaaa gtacagccgc	9060
atagtgccgc ggaaggtaaa tatctggaac tcgatggtg gatcagtcgt tgcatcgacg	9120
agggtacgt cttcgatctc acaaacagga gcttgtgccc ccttttgccc gtacgcacgc	9180
gctaggtatc tctccaacac gccgaggctg ctgaggttcg gtacccggaa gggcggacag	9240
ccggcaacgg gcaaggagcc aaggaaagcg gcctcctggc tgtcatacag cggcagcaac	9300
tcgagaaaac tcacagggtc gcctgccgag tctgagggca gcgccgacag atctcgcgag	9360
taaacagcac ccagacgttg cgtgaggctc tcgaagccac ccgtgagaca gaacggcacg	9420
acaaagatac agaggctaag tgcgtagtcc ggaaccaccc atttggggtc cagaagtgga	9480
cgcaggttcg cgacgagggg aatgagcatg ttggcgcgct ccggtgtgct gctgttgagg	9540
ggaatgaggc cccagacgcg gacaatactc gcgtgcacgg cggccgagac gctcacgccc	9600



agctcttgca	acccgccacg	attgcctcaa	gcgtcggctc	gtcgaacaag	gtcaccatgt	9660
gttgggtggt	ggcaggcgcg	gcgtcctcgg	acccctcacg	cacagggaga	gacaagctgt	9720
acaaaccatg	atgccaatgc	cgcatcagct	catcgacggc	acaccccacc	cggtgtgaga	9780
cgggtgtctc	ctgcggcggg	aaccccagaa	tatagtcgat	gccgggcggg	agggacggtt	9840
gtttgacgtc	ggtagtgtag	caatctaggt	tggcgtcgag	gccgagacgg	aagactgact	9900
caagaccgag	catgaagggt	tttgtcgcct	tgtatagtcc	cacagcgtca	aatcggaggt	9960
gagtgtcgcg	aataaccaag	gtcgacgacg	gaggaaacca	gtaggccatt	gccgttggac	10020
gaggtcgaaa	gatcattccg	gcacgtcca	cgccctgaa	aacggcctgg	ctcccttgg	10080
ttacgtggaa	acttagccgc	agccactcct	caggatccat	tgggggaacc	gtaaccaggt	10140
accgccctgt	ctcatctcgc	tctgaatagg	gcggatagat	tgcgcctatg	agcggctgga	10200
cgtatcgaaa	aacaagccaa	gcgcggcgga	ggtaggggat	ggggtcatca	atgtcttggg	10260
gcagtcgtaa	tttgagcttg	taggtgaggc	cctcggcttc	acgaccagga	ggcgtgttgg	10320
cgcgttggat	acgggcaagc	agccagttct	ccaccaagtc	gagggggcgt	gtgagagtgc	10380
cgtcttctga	tgtggtccat	ccgagagcga	caatggcatg	attccctgcg	ctgaccatgg	10440
ctgctctgcc	tgttaagaac	ggcggggata	gtctgggaga	gtaaagcagt	gagggcgatt	10500
ggatatcgac	gacgaaaacg	aaggaagttt	ccaactagca	ccataggcaa	gccacctatt	10560
tgggcgactt	taccgaatca	ctactacatc	ttgtgatagt	ccgtacttat	tggtatttcg	10620
acagcactgg	tgtgatactg	catgatgtaa	ccgcaccaag	gtgccaaatg	acgtgtctca	10680
tacctgcctt	atgcacgcta	gaagcgggtga	catctgtgac	taggccgatg	ggtcaataaa	10740
tgcgcattgt	accgcgttgg	tcctaataccg	ggtaatatag	ccacacactt	aactttagta	10800
tagcttatac	ctataatatg	aaaagctata	aacattgtta	aagctattat	aattactatt	10860
atactgtatt	aaattaagta	attaactcct	attatttagt	gctttaataa	tgattactaa	10920
attaatttat	tataaatccc	ttactaactt	actaaatact	aaaagtattg	attatatattt	10980
cttgagttat	attaatagct	atatcttaaa	gattaatata	acaaagggca	ttcaaaaaga	11040
gccttattac	ataatgttac	attgcattgc	gttttatttg	tggtaatcta	ggctctgcct	11100
agacctagta	atatagttgt	taatgtatgc	gcatttcgta	accctaggct	aatcgtacac	11160
acatgtccga	tgttaaggac	attcacagtc	aaggaattcg	gatatcgacc	ttgccagcag	11220
cgtccgtgcc	gcgcggggag	tcttgctctc	tctttgggtc	tgtccaatgt	ccggcgacct	11280

gatcatatga	tcataatcac	aaacgtagca	cccataacct	ggggtcaata	cataagtcag	11340
cccatgtgtt	ctcaaaggag	ttttctagt	tcccatcgc	cggggacttg	atctctcgta	11400
gcacacgcac	catcccaccc	attgccactg	acggctcata	cagaacttaa	tggatctgac	11460
ccaattcaac	acagctggca	tcgtttggct	gacggtcgct	gccatcgcca	tctcctatat	11520
cctgcagtcg	agctttctct	cttgggtacag	gctacgccac	atccccggcc	ctttcctggc	11580
ctcgatctca	agtctttgga	atgttctaaa	catcgtgact	gggcgtacgt	cgccggtgct	11640
cgagaaaactg	ccaggaaggt	acggcccgc	ggtgcgaacc	ggccccaact	acgttctcac	11700
agacgatgcc	gaaattttgc	gtcacgtcaa	tggcgttcgc	agcacatacc	cccgtaatgg	11760
gtgtaagtct	gtccatatca	cacgtctttt	gaaatgtagg	gagactcaga	gactcactta	11820
tactgtggct	tccaggggat	gaaggcttca	gggtcgatga	atacgaccat	atgggggtccc	11880
atatcgacac	gtcgggtacac	gacgccatca	aaagcaaggt	gattgggtggg	tacaacggca	11940
aggatgggat	agacctcgag	ggggccatcg	gatcgcaggt	caagaccctg	gtcagtgaga	12000
tccggcgtac	acgcggctca	aggccgagat	caaggccgcg	gtggatgccg	gcgaggtggt	12060
cgaggtcatc	accatagccc	aggcccagag	gctgccgtat	ctgcaggctg	tcgtgctcga	12120
gggcttccgc	atgcgcccgg	ccgtcgtgta	cgggcacttc	aagtcggtgc	cggccggcgg	12180
cgatacgctg	ccgaatggtg	tacgcctgcc	tgccggcacc	gccatcgccc	ccaactacat	12240
agcactgacc	cggcgcgccg	acgtctacgg	cgctgatgtc	gatttgtttc	ggcccagacg	12300
tttcctcgac	gccgagccgg	ccaagcgcct	cgagatggag	cgcgccatgg	acctgaattt	12360
cgggcttggc	cgctggcagt	gcgctggcag	gaacattgct	ctcatggaga	tgaataaggt	12420
tttattacga	ggttgggtgga	tgtgcatctc	cgctctttgc	ttttgttctt	ttcctgctat	12480
tgccctcgcc	ctcctttgct	atcctgacgc	gggagaggta	tgggacgaga	tgagagactg	12540
attcaatgcg	cagttattac	gccacttcga	cctccagatc	gtgtatccgg	gcaaagcatg	12600
ggatgaattc	acgtaaggcc	ttctgaaccc	tttttcacct	ttcgcgcata	ggcgtctcgg	12660
gtggcgcgag	cagcgtgcc	tggatattgg	agtgcatacc	aggttacctc	ttacctctgc	12720
aggggcgtgg	tatatcgca	gcataacatg	tgggtacaaa	tcacggagag	ctcgtaagta	12780
tagtggaagg	gaatacacat	ggcagtggtg	gccatgaacg	tcgatggcca	cgtagcaggc	12840
cggtagcaat	ggttggggga	ggacacggct	gagacggctg	gagagaacca	tggagatggg	12900
gtaagggaatt	atagcaatcg	aaataacgag	cgtgtttgtg	cgcgccgggc	tttgcctcac	12960
actgcctacc	taaacaagtc	cccaagtgat	gaataaaaatt	tggcctcggt	gccttctaatt	13020

ttgctctgag	ccaccaatga	aaaatcaact	tggttagaaa	acctcctcac	caaaaccata	13080
ttactagcgt	gataagcaac	acctgcaaat	gcgtaggcag	cttgatcatct	aaaaggccga	13140
caaccgcagc	atcttgggct	gaaaacttgt	tacccaagca	tcttgcatctt	ttgggttggt	13200
cgaatttagt	cgtgccacct	atatgagtcc	gaaatctctt	gtcccatctc	cctgctgagt	13260
atctcttcgc	atattacctt	gagagcattg	ccggccatct	caaaatcact	gacctccaag	13320
tatacttgcg	cacagagtct	agcccatatc	catccgcggc	aatcggcgat	gggtatccag	13380
gtcttgatc	tatccgccag	agcctttgtc	aagtaacgaa	ctgccggggc	gacctctttc	13440
tccgtcagag	cgccgcccgg	cacatgagct	ggggcagtg	acgggcccgt	ggcaatggcc	13500
aagggaagtc	gcactgtcac	gatgccgcag	tctctcatct	ggccatccgc	cccggccccg	13560
agaccaggct	cctccaagac	ctctgtctga	agtatctcgg	cgacctgtgc	accaccctct	13620
ttagcgagcc	acttgatgta	ctcgtaaatt	gccgcctcgc	caccacagac	gtctcgcttg	13680
aagcggaggg	cggtcgggat	gcacagatgg	ggcatgttat	cgctcgtggc	tgtgtaggca	13740
aacagtgtct	cgaatgaaga	cgctgttccg	tttgactga	ccatctgcga	ccatagggga	13800
agttgagagt	tgccattctt	gggaataaat	ccgaaagagg	tcgggatggc	ggagcgcctc	13860
atgtgctggg	tgcgctcggc	aacgtataag	aaagcacaag	gtcgaggaac	aaatagccac	13920
ctagtaaagt	gaatgcgcag	aggatcagca	tggcaccacc	gtatcaaggg	cgtggagaga	13980
cgttgatcc	gcatacttgt	ggcaatcaga	gacgaagaag	tcagggtgca	gctcctggag	14040
attgacctca	aactggccca	cgctgtgcgc	cccgtcgacc	aatgtcatga	tgcattcctt	14100
ctggcatacg	cgcagcaagt	cctcaaacgg	catcctaaca	gcagggatgc	tcactatcgt	14160
ctctagaatt	gctaggcgcg	ggcgtagacc	cttagccctg	atttgagcta	ttgtagtctc	14220
aaactgagac	acaatctttt	cgccagtcgt	ggggagctca	aactctacct	tacgtgtttt	14280
gaaggatcga	gtctcggcca	aggaagttat	gccatggtcg	atggcaccgt	aagtagttga	14340
tagagtcacc	acaacgtctc	gttcctcaaa	ttcctggttg	taaaggacgg	tgaagatgcc	14400
agtagtgacg	ttggagacga	ggacgcactc	cgagacggcg	gcgtgaacga	gacgagcaag	14460
gccgagacgt	gcctcctgca	gcaccaagcc	ttggtaaaac	tcggagaaca	agtcgggctg	14520
ggcctccagc	agggaccagt	aatctctgat	ctgcttgctc	accaccttgg	gccatgacct	14580
acaagatgct	acgaccacgt	cttggttagtt	cagatacatt	tcacatggaa	actgaaacgg	14640
gcacatcgtg	taatgagcaa	ctgacaagaa	ttgagggttg	tgtattccgg	atccatgcag	14700

aaagcctcca gcataggctt gccaaatggg atacgcttgc tattcactgt catcttgaca	14760
aggcgatgtc accgaacagg taaatgggaa tcagtgagag tggagatgcc agcagcactt	14820
ggtgaaaagg aacacgtcaa gttatagcac acggctggca ttcttatgat ttacctaatg	14880
ggacgaaaat caccatcc acatcccgtg gttggttagt agctgagcag accacatgca	14940
tgtgtgggcg gggtgataat atgccaagga cacgtaaatt ggcatctcat tcttttattt	15000
acatgtgtcg tttgatcatt ggatgcttct ggtcaaccat gcatatgtat gcttgccctct	15060
gaaaaagtgc aactttctga aagggcagcc agatatttaa taaacttcac aactccagcc	15120
catacccccc tttcgtcgaa gctgtctaaa gaacagtcca acctacgaga caatcacggt	15180
gaagccctct gtttcctgta atccatcatg accgctgctt cttcccctca cccaggcgctc	15240
tctgcagagg acatcgaatt ctaccaagcc aacggatatc ttcgcctgcc ccaagaggct	15300
cacggtctgt tcgacgactt ggcaaagctg caggatatggg tggcagaaat ctcccagtgg	15360
ggcctggaaa cgggaaaatg gcgacattat tacgagacaa cgaatggcaa gcattctctc	15420
tgggggacgg agaaactaat ggaataccac gcgcccattg aagacttgat ttctggcgag	15480
gcacctctcg cactgctcaa gtcgctgacg ggcaaagaca tgggtggtctt caaggacgag	15540
ataggggtgga aactcccagg cgggaagggg gcggttcctc acctcgaccg gcccgcgta	15600
tccatgtttg ccccgagtt catcgagatc atgatcgccg tagatgcca tacggtcgag	15660
aatggttggt tgcagtttgt gccaggctct cacaaggaag cagccccgat ctcggccgac	15720
ggccgcattg catcggcggt gctagagggc aaggagtcca tccccatggt cctcgacccg	15780
ggcgacgtct tgatcttcaa cgagagcatg gcccatcggt tggagcctaa caagacggac	15840
caaagacgtg cagccgtctt tggcacctac cactttgacc tgtcccagcc cgacctgcgg	15900
gataaattct acgcccaccg gtcattccac agccctccgg aaaacggtaa ggcttttcca	15960
tgaaaagatg atgtttgcat gtttgagac caatgctaac atgatactg accaatctta	16020
cgtagcctgg gttgaaaaag tgggagcgca gacttgacaa gaacaatacg cataaagtag	16080
acagaagaag ggatttggtt aggaggtagg gggtcgaaat ggaacttggc attcatcacg	16140
ttgcgtctta ttgttcgtg cggtgtgaaa atcacacgcc tgtctttcaa tacctagagt	16200
acgtttacac aatcccgtat gtctgtcct tggcagcatt acaaccaga agccgacata	16260
ggacgccaca tttaatgggt cacttaatgc acataccgag gaagtcctaa tcattaacag	16320
tccatactg tagcttgctg atattgattt ttactataac taatatgccg atatatataa	16380
tattaccagc ccgggcc	16397

<210> 17  
<211> 7478  
<212> DNA  
<213> *Neotyphodium uncinatum*

<400> 17  
gacgaaggca gtcattcaca gcatggaagc gccggggatc ttaacaggaa tttggacgat 60  
aatggctctg aagaaagtgc cacgatatct tattcaaacg cggcttggat gctcccacag 120  
gctcacaatg agacttttcc agtcctctta caagcattaa tgcggacgct cctgcttctc 180  
tgtcaatgta cgccttggga cagtggacct ctgcctcca cgaggaagcc ataccacgtc 240  
gacctggtaa agcagaagca aactatccgt catttgctgc accgcaggag acggattggt 300  
cttccaaaat gcaagatttg gggcaagcta gcacatgcaa gtcattgctc actttacgtg 360  
gcagccctcg ttgaagcatt atcattgctt aaacatcttt tgggcgagga tatgcatggc 420  
acgagatatg agcccgtgga agacattttc aaccctggtt acggtcttca aaccgatct 480  
agagccgaca cgaaacagtt ccggagagtc atcaaacaca gagaccagca gcggcgaagg 540  
gggcgaacgg tcgatcatgc aagttgaagt cgcgaatcta tctggtcagc tccgtcagat 600  
atcgcagcta gaagaaggcc ttctacgagc atggaggagg gaaaacaaat cagaagggtg 660  
gattgcttcc aagcttaata agaaaaaatc ggctaactcc gatctccgtc cacggaagaa 720  
gtaaatatcc ttaaccaggg caaaatttac cacggaaaaa gatgatctta ttaaattatg 780  
aaaggaggac gagcaactta catggacgca aattcaggag cggcatggca accagttcca 840  
cacgcgatcc aaggagtcatt tccagggtgc ctaatgtaca aggctgaaga gccgtaaaaa 900  
aaaatgtgac ctacggcagt tgatgtggtg aacaaaattg gatatttgga aagaaatgtt 960  
gtcacgtcgc acgccctatg gaaggatttg gcagtggact tggatcttga tttaagctat 1020  
ttagagggga atttcgtcaa tacttataga ggtctctgaa gttgttgctt tcctgatatt 1080  
gccatctgta acttggttga tacagttggt gttggagccc cctgttttca aagaattggg 1140  
ctcccgttga catatttgct cgtggtcact tacgcctggt ataactatgc gccagagtac 1200  
cttggttatt ggactgttca cgcatgacta gctgtaatcc atgtgatgca gtcggcactt 1260  
ccgatttatt caatcatggt tgggtgcttg tgctgcactt gaacacgacg taatgaatgc 1320  
aatgggcaca caactgccac atttctctgc ttctgtgcct cgattgcgtc atagaatctc 1380  
cagcctccat ctgaagcctc atccgcgcca acctcggaca agccaaagtc cttgtagatt 1440  
attatagcat aaagactaag cagaccccaa acccaaacc cgaattttgt cccctcctc 1500

ttcatgtaca tctacaagct ttaccactc attgctcttg ttcttggttac gctggagatt	1560
gtccaatttc cctgcgaact tgccaggagg tcgattcaag tcatcaacaa cctccgagtc	1620
cagaaggata aacgtattgt gccgcggtgc atcccgaagc tcgggtatcg cctcgaggca	1680
ggcggtcatt ttggcgtctc atgtcgtgga taggggcgtc gcggagctcc gagttgtcaa	1740
tgagggtgtc atgttatgaa accgcctcat cagctcggtt tacttggtcg gtcggcgtcg	1800
tggtgcggct gctgcccagg gtaccagcg gcgactcgtt aaaaaacaga aagctgaccg	1860
tcatttatag atcatctcat ggtcacgagc ccggccatgg ctggatatct cgcaagcagc	1920
tggacagatt gagaacaaac catcactttc aacttcctcg ctacaacaga attgaagttt	1980
gcggcgtagc ttgttgcaat cttcgtattg ggccattgct gtcctatcc ctgacttgat	2040
cgccaatagt accttcaagt tctccgtata cgaaatttcg tcatgacgtc caggctaattc	2100
cccgattatg cggcgaaggc tctccatggt tgttgatgac aacgcgtcgc acaaccctg	2160
aaaaatagca cacttaccaa ctaactctac taaaaggta catttctcaa tagactgggt	2220
tagtagggca taaaactga attattatct gtcaatagtg cctaaggggg gagcggcaca	2280
gcgtggccac tcatgggatc aggtggcggg aaccttgca tagatcccgt agctcgagag	2340
agctcgagag aagcttccgc cgaaaggcta ggacgggcct aggatgctaa ttctgggtaa	2400
atttttagga tcagactgag acttgaagat ctagactaga tcattctgat aactgcaacc	2460
cagggatgca ggagaggagg ggaaacaaca tctgtcggta attggcgctt cagatagaag	2520
ccgtcaacgg gtccatacaa tgccccccc cccccctga attatTTTTT gtcaaattcta	2580
aatgccctag tcttttgttc ctctctaata gctgcaatta gctgtacgtc cgtacggagt	2640
aagtattgct attattatta gtaagctaca aggaaaattc acggggtgtt aagtgccgct	2700
taaagatagg gagggggtgt attactagt ccacacaaag gtgggggtgg tggggcgtgg	2760
tctgtgtctg ttagtggtgc acccacaagg gcataattga tccctgccgc acgatagtct	2820
cgctactcaa ctagctgaga caagagtcca ccctagcta gtcattttcc aagacctctg	2880
taacttcata gtatgtttca gcaactgtaca agtaccacac cgatggtaga ggtacttagg	2940
tatttaagcc gtagtctgca ccctcttaca gggcgggaca actcaataga ggtggtcaca	3000
ttgaacccta gcttcgcggt ccaacagtta ggacgcaggg gcgtaccgca attattaaat	3060
gcgtatgtac atgtatatgt accgcgttat tatatgtctg tggatctaga ataccggtcg	3120
acctgtcatg gtctagccct aagggtctaat cgcggtgcc tgcgccacca tgtgggtgat	3180

gtgcccgaatc ccctgtttacg ccataggcaa cgacaaaaga atacgtattg tacaagtcac	3240
cattgacttg tgcaattgac acctatattg ctaggcctag gcaaagccta ggctatcaca	3300
ccaccacact attttaatgt ggcttatgtt tactaattat tattaataaaa atcaatagta	3360
tcttttatag ttatagagaa tagctatatg ctagggatta atataataaaa gggatatttta	3420
aaagagccct ataatagtta tattatatta tgttataagg ccttttgata ataaaaatga	3480
aggaactata tagaagaaat tattgattga tttttatatt ttttttgggg tcattagtta	3540
tgactagtgt atctaattta taagtaatat gacaattact agcaatacct agttagttta	3600
ataattgaca tataaataat cagcactata gtaatagata aaacctgtaa ttcctaggaa	3660
taagctttta ggtcacaaat acagggggct gtaaggtcag agcaaagttt gcgataaact	3720
ttgtggtaaa agagattata agcattaaca tggcttccta tatttgctgc caagtacttc	3780
ttctagattt agactaacgt ggtatgcgca tttagtggc ctaggacgta tgggccggac	3840
tgttgtaggc tctccgtcct agcctagcgt atctatgtat tggctcggca acaggcttac	3900
gggggctagc caagatgtag atttgaacaa gatgctatca aactgctatt gtgtctgccg	3960
agaaggttac tggcagatga caccgacgga aacgatgccc attttcttct ggcatagaaa	4020
ctgagacgta ttggtgtttg tcaatactag agtcttatca gtggaacatg gaaaagcgtg	4080
gggacaaaat ctgcctagt gtcattccaaa aaaacccaat cgctacttgc gtctgaacct	4140
gaacagtgt tgcattcgat atacgacaga aagtggcttc acagaagagc cgtctcctct	4200
acataccatg cttgaaacct ctccagggtt ttggccagac agttttccag ctcccagca	4260
tacagaatca acccccac cctgaccggt ttgttagagc agtccacagt acaaagcgac	4320
aagagccttt gtgcaacct ccaagttttc tcttccttgt tagcctcagc tgttttcttg	4380
cttttgctg catgtgtatg gtagagtgtc ttgtccaaa gtaggctcat cttcttctcc	4440
cactggcagt gggacttgga agtcgcctcg agttgacaaa tgcccgcctg ttggcacttt	4500
gagatgattt cgcacaacca ctctacctga acagtgatga ccgcggggga gttgaccaga	4560
agtgtaggac actgggggtcc atagaggaaa aacatgttag ggaatgaatg gatggccatt	4620
ccgagatgcg actcgacacc atcggaccag gcatcttcta aacggatgcc attccggcct	4680
ctgatatgaa gactcctgag cccgcttgcc tcgtcaccaa acccggtggc aaaaatgatc	4740
gcttcgcatt caactgtctg cccatgaacg cgaatacttg tctctgtaat caactcgatt	4800
tgctgggtgc tgatgtcaat aatcttcaca tgtgggttgg ccatgatctc gtaaagatcc	4860
tcttccaaac agggtcgctt gatgccaaag gcaaaagatg gaatctgagg caccaggagc	4920

tcccgtttgg	tcacatcgcc	gattctagct	cgtgtccgcc	gagcccagaa	atcatacgca	4980
tcccggttgg	cttggatggt	ctggcacaga	tcccggaacc	cagccatcca	gaaagcccag	5040
cctcccgcc	gatagcggtg	ttgataaaaa	tggtttcgct	cctctattgg	gacatccaac	5100
gtgtcctgg	cacggggcac	gtagccgaaa	ccgttcgaag	tctgcagtcc	aagtcgtagg	5160
gcttctctgt	ggtcgtcggg	tctcatgcaa	agtgccgttg	ccgtctgggt	cgggctgccg	5220
tacttgcgta	gagtgaggca	tggagactgc	tggaatatcg	tcatggcctt	ggctatctta	5280
cccacagatt	ggatgatctg	aactccgctt	ggccccgttc	caatgacagc	cactctctta	5340
ccgcgcatac	tgacagcgtc	atgaggccat	tttgcggtgt	ggtagatggc	accgcggaat	5400
cgagacattc	ctggaatcct	agggatattg	agaaccgacg	aaaaccctac	agctggaatg	5460
aaccatcgcg	cctcggctct	tctgccatct	tctaaagtga	cgggccatct	ctgggtagtt	5520
tctgagtacc	tcgccgcgga	aaccgaaaca	ccaaactcaa	aactagcaga	gatttcccat	5580
cgttgtcca	cgtggtcaaa	atatctgagc	atctctgcac	gggtgggaaa	ttgctctccc	5640
cattcccaat	cttggaagaag	ctctgcatca	tagaactggt	agaagggaaa	taggctgtcg	5700
actgctgctc	ccggataaag	gttctcgcgc	cagacacctc	caagacgttc	ctggcgctcg	5760
aacccttgga	ctcgaaatcc	gagcttttcg	cagtctttag	tcatagttca	gtcctacctc	5820
tctactctat	tcgtgtcttg	gatggcaacg	tagactcacc	tgtagacagc	gagaataacct	5880
gaaaaaccag	cgccaacgac	gattgcgtcc	aaattggtca	atgtcatctt	agtgaatatga	5940
agaagaatta	aataactata	tgagaatatg	aaccaaattt	tggtgtatca	gaaatgtcat	6000
caaaggctaa	cagctccggg	gagagaaaag	cttgatcgag	gttgaaattt	actgaggtgc	6060
gtaagggaact	gatactaaga	cggtcgatta	tctgtgtgag	aatggtcaga	atgggtagct	6120
gcgcaattgg	atagactagt	ttgggagggg	gagtatagtc	gtacacatgg	attcgcaaat	6180
gggaatgaag	cgttaagtct	gttgtgatat	aataagggtca	ctaaatgcgc	ataacgcgtt	6240
agtcctaatac	cgggttaacg	gtccatacac	cttgtgccta	tatgtgtaat	atttaaagggt	6300
atcaatacta	ttaaagctat	tataattatg	actatactag	tattaagtaa	ttaaactctct	6360
attatgtacg	ctttaaataa	ttgctactaa	ataaatttaa	ccgctataaa	tcaatcactt	6420
gcttaataag	tattaatagt	attaattata	tcttgtatag	ttatataaat	agctttatct	6480
taaagaatga	cacaataaag	ggcatgtaaa	aagagcctaa	ttacattata	ttgcgttgtg	6540
ttgtgttgcg	ttatattata	ttatgaggct	ttttacaata	agcattatag	tcagtgcatt	6600



ttatactagc tctctaatat atttagcaag gggcttagta tactagtact ttcttttttag	6660
gaataacgcg gtatgcgcac ttactgacct agtacaatac accccctgaa ttattttaca	6720
aatctacata acaggggtaa ttaagctaata tagatattag ctaggaaata aaggagatag	6780
ggggtagtac attatactac tagttatcta tatagaaata gatatacttt ttcgtggcgc	6840
tatatacctt gtatatttcc ctcatgctc tctaaaacaa aacagagggtt atattacata	6900
tatagctaata catagctatt agagagagac gaataactag ggcacgtaga tttgtaaaat	6960
aattcagggg gtgtattgta taatagggca taggagaggg gtgagtgggg cgttcactcc	7020
gtgtcatgtc acttctcaca caaggagggg aagcgttgct attcggagct gtgttttctt	7080
gcttaccaga gctatgccta ccacgtaata aggccacatc ccacatctca cgccccgcca	7140
ctaaattatt tgtatagcac tccctggcaa taaaaaatag ttagaattac agtacacccc	7200
ctgaattatt ttacagatct tcataacagg gttgattgcg tgaattaagt gctagcaagg	7260
aaataaggga gatagaggct aggattagga agtacctaga ttcctttata ctatatttaa	7320
aatttttcat atcttctagt agtactacat accctacata ttttccttat agctctctat	7380
agtaatataa gtgttatagt gcacttatag ctaactaaag ctattagaga gaaacgaaaa	7440
aactagtgca tgtagattga aaaaggctga tagaccag	7478